

Aviation News

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JUNE 19, 1944



Giant Superfortresses bomb Japan: B-29's like this, capable of carrying the heaviest bomb load, faster, farther and higher than any other military aircraft, attacked Japan last week. Pictures and details on the new superbomber, sole weapon of the newly created U. S. Global Air Force, were released simultaneously with the War Department's announcement of the raid on Japan.

B-29 Details Are Released with Bombing of Japan

Creation of U. S. Global Air Force, designated as 20th and headed by General Arnold, is disclosed at same time.....Page 7

CAB Plan May Clear Way for U. S. in World Air Trade

Board reveals basic draft of program for establishment of new lines designed to expand present 80,000 miles of routes to 140,000.....Page 9

Rising Costs Offset 15% Gain in Airline Revenues

Income for first half of 1944 expected to exceed \$66 million, reflecting increase in planes and new traffic records set for period.....Page 35

Northeast, Eastern Get New York-Boston Permits

CAB decision establishes parallel competition with American and permits TWA and United Air Lines to enter Boston from West.....Page 37

Artillery Works Out New Lightplane Specifications

Trend in design follows plan developed by several builders to offer simplified, spin-proof models for post-war civilian market.....Page 17

ACCA Group Offers Broad Port Planning Program

Seeks to spur building of airports, flight stops and air harbors and to simplify rules on licensing in move for post-war expansion.....Page 15

Heavier "fire power" licks this enemy, too



Fanned to fury by the terrific slipstream, a motor fire was the toughest for a flyer could meet. Now it's been conquered—by the fire lifting power of the Kidde Built-in Extinguishing System.

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THE AVIATION NEWS

Washington Observer

PRIORITY SPLIT—As additional equipment goes back to the airlines, there is some talk of splitting priority determination duties, now entirely in the hands of the Army, between the Army and the Civil Aeronautics Board, the former to handle the military and the latter the civilian. CAB, however, is understood to be cool towards the idea, particularly since the Army presumably would retain veto powers over civilian as well as military. Nor are the airlines enthusiastic. They anticipate that such a division would necessitate a constant check between the two agencies and likely lead to confusion as to who had just what priority.

AIRMAIL MOVES—About 88 percent of the airmail is now being flown straight through. When a substantial number of the 28 aircraft returned to the airlines during the past five months have been converted and put into service, the figure probably will be raised to 94 percent. Last spring, about the time the new eight-cent airmail rate went into effect, public dissatisfaction with the service reached a new high pitch. The Postmaster General and his airmail superintendent took an inspection tour around the country. They found war production business slowed by late airmail, and the PMG went to bat in high places. The Army, after controlling for more than a year that the post office ought to set up an airmail precedence system, finally conceded airmail space enough to handle the bulk of all airmail, and the PMG went to bat in high places. The Army, after controlling for more than a year that the post office ought to set up an airmail precedence system, finally conceded airmail space enough to handle the bulk of all airmail, and the PMG went to bat in high places. The Army, after controlling for more than a year that the post office ought to set up an airmail precedence system, finally conceded airmail space enough to handle the bulk of all airmail, and the PMG went to bat in high places.

WHAT OF THE LUFTWAFFE—A lively topic in aviation circles in connection with the invasion of Western Europe is the absence of the

Luftwaffe in any great strength. It is argued that the Germans perhaps are holding it back for the defense of Germany proper, but against that is the contention that by that time the battle would be hopelessly lost. Army Air chiefs still do not believe the striking power still held by the German air force, and it appears to be a question as to where this strength will be thrown. The pattern of air power has emerged in connection with the landings and, regardless of the disposition of the Luftwaffe, Allied airmen control the air over the combat theater. It is possible, of course, that the Germans do not have the strength and the bases credited to them, although this seems unlikely. Whatever else, the AAF and the RAF are, and will remain, more than a match for anything the Nazis can put into the sky.

SECOND PHASE—As the invasion enters its second phase, most airmen in Washington believe the Luftwaffe will begin to make a strange appearance and the situation which sees Allied planes of all types roaming the skies almost unopposed cannot continue indefinitely. Our ability to replace losses and the lack of replacements on the Nazi side assure us continued air superiority.

LEAVE FOR AIRMEN—It isn't generally known, even among members of the AAF, but the custom under which a flyer goes home after a stated number of missions will be eliminated. Reason given is that there would be a complete turnover in the AAF in a short period if the practice were continued. It could also be argued that the long and expensive training for pilots, bombardiers and navigators would not



A pair of B-29 Superfortresses dwarfing the B-17G Flying Fortress

THROUGH THE DEAFENING ROAR



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AVIATION NEWS

June 19, 1944

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be justified. Instead of being rebuffed after a stated number of missions, it is likely that the length of time a flyer spends in combat will be determined by the flight surgeon. It is well established that the rate of personnel loss thus far is gratifyingly low on a basis of what had been expected and increased air superiority should develop further improvement in the air casualty figures.

WACS AND CIVILIANS NEEDED BY AAF—In at least some branches of the AAF, enlisted personnel have been notified that they must be ready for overseas service within a few weeks and strong efforts are being made to replace them with civilians and WACS. The WAC retraining program, it is conceded privately, has been disappointing and the labor freeze isn't working any too well in many instances. One Army official reported that every day civilian employees disappear, and sometimes no one knows where they go.

LABOR SURPLUS—In connection with all the talk about manpower shortages, it is well known that more than half of the country's population is living in communities classified by the War Manpower Commission as areas of labor surplus, where the industrial employment problem is not serious enough to call for classification. WMC officials point out that a shuffling of only a part of this surplus labor would ease the situation in many of the 104 areas where labor shortages prevail, and still there would remain enough labor to handle much of the authorized civilian production.

HELICOPTER SAFETY—Light plane instructors may well give thanks to the rescuer of a sequestered pilot who has been flying helicopters for some time. "The greatest thing to me," he said, "is the feeling of safety that you get in the helicopter." Discounting the enthusiasm of the pilot for an exciting new craft, the fact that he specifically mentions the safety angle means that the average flyer probably will feel the same way. Other factors being the same, safety will loom large in post-war sales.

*

DEVELOPMENT—The helicopter may not be just around the corner, but it won't do it in a flash either. The debarking job has been for the general public—helicopters were getting popular too fast with too little basis in fact. The big factor is the rapid progress made in developing the military version. The helicopter can be seen from the plane, and will catch up quicker than it is being being developed. It is nearer some commercial uses than most realize.

Washington Observer

RECONVERSION TREND—The trend in reconversion policy, as recently expressed by a high WPB official, is simply that the War Production Board is gradually authorizing more and more resumed or increased civilian production, with constantly greater prominence as proof develops in individual cases that the output can be accomplished without interference with the war effort and with reasonable equity to all concerned. No one needs to be convinced, of course, that in the June of 1944 war requirements still come first and that these requirements are still constantly changing in types and quantities unacceptably. There is no bonus for production as to when and at what rate whole industries or even individual companies can resume or increase civilian production.

FREEDOM VS FIXED BASES—Civil authorities everywhere are displaying common interest in obtaining freedom line services. They fail to grasp the possibilities of the post-war fixed base operator. Some energetic businessmen, many of them now or recently pilot training school operators for the service, are going ahead with impressive plans for large subsidiaries, regular and overhead buses tied in with charter service, but have been compelled to stress their CAB applications for feeder line routes to gain maximum local support. Naturally, most of them will go ahead with freedom plans if the existing CAB approval process isn't too fastidiously strict. There is no bonus for freedom as to when and at what rate whole industries or even individual companies can resume or increase civilian production.

DOMESTIC AIRLINE COMPLAINTS—Some members of the Airlines Committee on U. S. Air Policy have been contending that a provision of the civil aeronautics law has been suspended at the instigation of two or three senators and officials of the State Department. They refer to the stipulation that hearings shall be held as early as possible on all route applications and denials rendered by the Civil Aeronautics Board. No hearings have been held on foreign applications because, according to these critics, members of the Civil aviation subcommittee and the Senate Committee have advised the Board to wait until some progress is made on international air policy. Some observers believe the Policy Committee's enthusiasm was partly responsible for the Board's postponement last week that it will soon begin hearings on foreign applications for the Spokane for the Board commented, however, that many laws have been suspended on account of the war, that equipment would not be available even if operations were authorized, that much of the world is in combat zones, and that even if the above were true, the Board, working overtime, could not have got around to the foreign applications any sooner.

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Aviation News
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June 19, 1944

Details of B-29 Superfortress Revealed with Bombing of Japan

Creation of U. S. Global Air Force, designated the 20th and headed by General Arnold, is disclosed at same time; equipped solely with new gun-toting Boeing planes.

By SCOTT HERSHEY

Bombing of Japan by the B-29 Superfortress, officially announced by the War Department, permits release of the following story regarding the newest air weapon of the United States which has been held for this not unexpected attack on the Japanese homeland.

A new United States Global Air Force, operating directly under the joint chiefs of staff with Gen. H. H. Arnold as commanding general, was unveiled simultaneously with disclosure of combat action by Boeing's great B-29 Superfortress bomber, with which the new air force is solely equipped.

Universal Scope—The new air force designated the 20th, has its headquarters in Washington, is not confined to any particular theater and is capable of operating anywhere in the world as evasive peering up of the vast range and savage striking power of this airplane—heretofore one of the

Air Force's closest guarded secrets and one on which many details may never be revealed.

Gen. Arnold, commanding general of the AAF, is a direct command of the 20th, the establishment of which some months ago made aviation history and which marks a turning point in aerial warfare. Brig. Gen. H. S. Hensel, Deputy Chief of Air Staff and a veteran of the European air war, is Chief-of-Staff of the 20th.

A group of selected writers, including a representative of AVIATION NEWS, was permitted to inspect the B-29 thoroughly and to make a flight in the airplane at Boeing's Wichita plant the first week in May. Reaction to a flight in the bomber was one of security, stability combined with a sense of great reserve power.

Larger Bomb Load—It is difficult to write about the B-29 without doing in superlatives. The B-29

carries a much larger bomb load, has longer range, higher speed and greater service altitude than any other bomber in the world. Its steady functional nature is an answer to the needs requested by the military, and pilots report it is a very fine flying airplane.

The Superfortress is built again as big as Boeing's B-17 Flying Fortress and its engines are nearly twice as powerful. It has a wing span of 141 1/2 feet, a 90 feet long and has an overall height of 27 feet. In comparison, the Flying Fortress has a wing span of 103 feet, is 73 feet long and 19 feet high.

The big bomber is flush-mounted and built-jointed externally throughout and aerodynamically the clearest large plane yet designed, incorporating unique nacelle doors, enclosed turbo-superchargers, flush drains and vents. It is best described as long and cylindrical in shape with slender, tapering wings.

The B-29 has a single fin and rudder closely embracing the dorsal fin which encompasses the Flying Fortress. The great weight of the plane is supported by a tricycle gear with double wheels both on the main landing gear and at the nose which is steered and projects well ahead of the wings.

18-Cylinder Engines—Engines for the Superfortress are being



Representing the New U. S. Global Air Force: An overall view of the recently disclosed B-29 Superfortress, used last week in the raid on the Japanese mainland. The armament has been deleted from the

picture by the War Department for security reasons. The new aircraft is equipped with four Wright Cyclone engines with turbo-superchargers and has been called a model of streamlining.



AIR TRAINING LEADERS MEET:

The need for a strong governmental air policy is supported by Earl D. Prudden, vice-president of Ryan Aeronautical and Ryan School of Aeronautics, found a responsive audience at the recent meeting of the Aeronautical Training Society in New Orleans. Some leaders of the meeting were, left to right (rear), Thomas H. Beck, president of Oswald Engineering Publishing Co., and chairman of the U.S. Air League; Brig. Gen. William H. Walsh, AAFTC, Fort Worth; J. Wendell Cowles, president ATC, front row; Maj. Gen. William G. Butler, Eastern PTC; Maj. Gen. Jacob R. Finkel, AAFTC, Fort Worth and Albert J. Lodewick, conference chairman, Lodewick School of Aeronautics.

built by Wright Aeronautical Corp., the designers, and by the Dodge Division of the Chrysler Corp. The engine, listed at \$2,500 per each, are 18 cylinder, radial air-cooled cylinders. The four develop a maximum rated at 5,800 hp, nearly twice the 4,300 total of the B-17.

Installation of dual sets of turbo-superchargers solved the problem of providing sufficient high altitude super-charging for these power-plants. These engines turn through reduction gears—the largest propellers in use of an airplane today—four-blade Hamilton Standard with a diameter of 18 feet six inches.

The reduction gears, built especially for this plane and of the lowest ratio ever used on an airplane, turn the propellers but 33,100th time as fast as the rpm. of the engines. This great reduction was necessary because it was essential for aerodynamic reasons to keep the speed of the propeller tips below the speed of sound, and yet to utilize the maximum power of the engines.

Nearly All-Electric—The B-29 is the heaviest airplane has yet attempted to be completely electrically operated. It has an auxiliary power-plant to operate its various devices and has about 150 electric motors of 40 different types. Every piece of equipment

on the bomber that moves is actuated either by an electric motor or solenoid, with the exception of the braking system which has a hydraulic boost.

An outstanding factor in the B-29's superior performance is a new wing design, known as the Boeing III developed by the Boeing engineering staff which says they have more aerodynamic refinement than has ever been achieved in a wing of its type and magnitude. Specifications calling for speed and range made it necessary for the wing to carry a greater load—fuel and bombs—per square foot—wing loading, than any other wing ever built. This was achieved by development of a new airfoil section and the incorporation of a set of great wing flaps. These flaps give the airplane short takeoff performance and short-destination landing qualities. They constitute nearly 20 percent of the wing area.

Use of Electric—Instrument consists of power circuits with multiple gas installations. It carries 16-caliber machine guns and a 20-mm. cannon. The airplane is manned by a crew of 11 and includes a flight engineer. Consequently, the pilot's instrument board has only the flight, manifold pressure and tachometer instruments. The co-pilot's board has flight instruments and indicating

devices for landing gear, wing flaps and propeller governors. The engineer's station is provided with all necessary engine controls and instruments. The navigator's station is equipped with a table, map, wheel, driftmeter, storage space and instrument board.

The large control surfaces of the B-29 are actuated "direct" by the pilot. A signal engineering achievement, developed through research conducted by the late Edmund T. Allen and the Boeing aerodynamics unit, the control surfaces are so closely balanced, both aerodynamically and statically, that as power or boost is required to move the controls.

Gen. Arnold has described the Superfortress as an airplane which places previous four-motored bombers class in the light-heavy class. The B-29 dimensions, a personnel and a flight in this airplane emphasize his statement.

Budd Cancellation Explained by Navy

The Navy asserts the cancellation of its contract with Edward G. Budd Manufacturing Co., for 170 stainless steel Cessna-type cargo airplanes does not mean the Navy's need for transports has lessened, but rather that the Douglas transports, called the R4D by the Navy, are now available in large numbers, at lower acceptable cost. In announcing the cancellation, the Navy said for Cessna-type production had lagged seriously, only four having been delivered to date, and added that production costs were substantially more than original estimates.

The original order for the Cessnas from the armed services was 800 planes, but the Army recently canceled its contract for 400 and, with the Navy's cancellation of 170, the company is left with only 23 of the original 800.

Blocked Service Test—It was pointed out that the new type plane was as yet untried in actual service and that the need had decreased, due to delay of over a year in deliveries.

The cancellation had the approval of the production executive committee of the War Production Board, and it was expected that some unspecified war work would go to Budd to avert unemployment of several thousand workers there, although several months will be required for any conversion.

CAB Program May Clear Way For U.S. Lines in World Air Commerce

Board reveals basic draft of plan for establishment of new global lines designed to expand present 80,000 miles of approved routes to approximately 140,000.

By MERLIN MICKEL

The international air route pattern for U.S. airlines proposed last week by the Civil Aeronautics Board may prove essential to the air commerce for world air commerce.

In one of the most significant and far-reaching steps it ever has taken, the Board decided to go ahead with hearings on overseas applications and announced a global pattern of 140,000 miles of routes it tentatively has concluded would be desirable for post-war operation by U.S. air carriers.

Competition—The fact that it is proceeding under existing law, which calls for "competition" in the overseas market, is the reason necessary to assure the sound development of an air transportation system, was one of the reasons that the proposed routes would not be a one-line operation, although no stand was taken on the controversial question of sheer instrument vs. competition.

The proposed routes, which include some 80,000 miles authorized before the war, are based generally on a maximum of explicable commercial traffic, and apparently do

not emphasize strategic or political considerations. None is proposed over the Pole, though they adhere to Great Circle courses.

Reasoned Policies—Board Chairman L. Welch Pope and they were based on a "concept of commercial service to provide for air traffic to and from this country. Whether less lines or other means may be expected to seek half this traffic when and as reciprocal patterns are set up cannot yet be ascertained.

The Board informed representatives of other countries of the plan before it was made public at CAB's first press conference on route problems. Pope asserted, however, that the pattern was not made up as the result of consultation with foreign governments.

Leading Rights—The action hinged closely on State Department prerogatives because of its diplomatic implications, involving the question of landing rights on the 6,000 miles of proposed new routes. Nevertheless it was granted there with enthusiasm.

Representatives of the Aviation

Division in that department, who attended the press conference, felt that CAB had served justice on the world of the nation's post-war air intentions, without being aggressive. One observed that the Board had moved three years by going ahead, adding that if U.S. aviation wanted early landing rights were obtained and Congress authorized an international air policy it would "never catch up."

State Dept. Informed—Pope acknowledged that State Department was thoroughly conversant with the Board plan before it was announced. Asked whether the War Relocation Act, he countered that submission of a tentative plan to the President was not necessary although any final award of an international route would have to have Presidential approval before it became effective.

A few days earlier, however, Pope and others were at the White House, and it seems unlikely that their conference with the President would not at some stage deal with the plan. This is more possible because Senator Bernard M. Baruch, chairman of the Senate Aviation Subcommittee, and Adolph A. Berle, Jr., assistant secretary of state, also were present.

Members of Clark's subcommittee are known to have advised at the Board's meeting. Senator Ralph Brewster said the CAB announcement would "accelerate activity" in Congress towards development of post-war air policy.

Needed for Post-War—Whether the State Department inspired the



International Air Plan Proposed by CAB: Civil Aeronautics Board last week approved international routes for U.S. air carriers and at the same time disclosed that it will hold hearings on overseas applica-

tions. The Board is shown at the press conference when the announcement was made. Left to right: Oswald Rogers, Vice Chairman Edward Warner, Chairman L. Welch Pope, Mortine Branch, and Jack Lee.

Military Progress in Helicopters Presages Early Commercial Models

Phenomenal advancement reported in design, Sikorsky demonstrates three rotor-powered aircraft now or soon to be in production; two new models expected by end of year.

By WILLIAM G. KEY

Progress in helicopter design at the last year and a half has been so marked that designs already are beginning to be stabilized and attention can be given to tool and space factors. Rotor heads have been amplified, and horizontal mounting of the engine is opening the way to better cabin space utilization and more efficient streamlining.

Progress on military models has been rapid, and vastly greater efficiency presages early commercial models than the previous for military production models.

Commercial models—It can be said that the experience of the last year has brought the production of military models shows that commercial models—not for private flyers but commercial flight operations—will come earlier than might have been expected from the YH-306, Sikorsky's first model, or its first service successor, the YH-4.

The Sikorsky Division of United Aircraft Corp. last week demonstrated the three military models now or soon to go into production. **Production Series**—Two new models—the XR-5 and the XR-6—are scheduled to be in production by the end of the year. The XR-6 is an improved helicopter based on the XR-5, which is the production model of the YH-4. The XR-6 will be built by North-Kelvinator in plants at Detroit, Lansing and Grand Rapids, Mich., under license from the Sikorsky Division, which will furnish engineering assistance. The XR-5 will be built in quantity at the Sikorsky Division's Bridgeport, Conn., plant, now turning out the production model HA-6.

Comparison—Some conception of the progress being made can be given in comparison of the YH-4 and the XR-5. The former has vertically mounted Warner engine of 110 rated hp., gross weight of 3,390 pounds, and net weight of 1,710 pounds. The XR-5 has a 450-hp. Pratt & Whitney gas turbine engine. Empty weight is 3,725

pounds and gross weight is 4,350 pounds.

Seating Arrangements—The YH-4 seats two side-by-side in the XR-5, two in tandem. The YH-4 resembles that of a glider, while both the XR-5 and XR-6 have been streamlined and are built with new sections resembling those of bombers. Both have cruising speeds of more than 100 mph. Equipped with the H-1 to 66 of the YH-4.

The XR-6 has an empty weight of 2,016 pounds and the gross weight is 2,890 pounds. Despite the added size and power built into the XR-6, the diameter of the main rotor blades is only two feet

greater than the 35 feet of the YH-4.

All three are operated from a landing area 70 feet square, and during the Bridgeport demonstration four of various types were operating from a field 300 by 400 feet, part of the time with new men wandering across the landing area. The YH-4 main rotor revolutions per minute are approximately 180 in flight; the XR-5 is between 170 and 180. The ratio, which is fixed, between the main rotor and the tail rotor (anti-torque) is one to five. Controls have been somewhat simplified.

Exceeds Expectations—The XR-5 exceeded everybody's best design. Since it was not expected to meet designers' expectations the XR-6 was pushed ahead to meet Army, Coast Guard and British needs. That Sikorsky's exceeded expectations will be put into quantity production.

The XR-5 gives a distinct impression of strength and size. It takes the helicopter out of the individual plane category and indicates that these will not be

commercial helicopters for years are due for a surprise, even though the pressure of military demands and the engineering detail needed to get production on such a new type of craft have prevented any preparation for commercial types.

A great deal of credit is given Sikorsky's General Manager Howard L. Whitney—known far and wide as "Bossy" in the pilot field—firmly, for getting assembly line production of the helicopters started. Sikorsky Division took over an old Crane Co. plant in Bridgeport in January, 1943, and in June production work on the first order of 30 helicopters was started. They have all been turned over to the Army and most of them are being used for training purposes to prepare crews for the better models soon to come. Some have been used on the islands, and one is in Alaska for cold weather testing and for whatever duties its qualities dictate. Others have been reported in Burma, where they have been used in rescue of pilots and other personnel from spots inaccessible to planes.



FLEET FRIGHTER CONVERTED:

New helicopter transport at Royal Canadian Air Force station at Trenton, Ont., is this white Fleet Frighter, originally designed by Fleet Aircraft Ltd., Fort Erie, Ont., as a bulk freighter. It is used to transport emergency cases to the RCAP hospital at Trenton.

landed in a small clearing in response to a signal from the ground and evacuated a soldier with simulated injuries.

Vertical Takeoff—The "wounded" man was placed on a stretcher, equipped with ear-phones and throat microphone, enabling him to converse with pilot or medical officer during flight. The rotary-winged aircraft immediately made a vertical takeoff and headed for a theoretical base hospital.

—A. M. S.

Raymond-Richardson is a primary school. Afterwards for the guards considered that the company was engaged in interstate commerce because the aviation models come from various parts of the country and leave the school to go to other states and that gasoline and food used at the school, and guarded, is shipped from outside the state. It was also contended that airplanes used involved interstate and thus established interstate communication.

Company's Argument—The company replied that the training activities did not cross state lines and that such out-of-state airplanes and cars in the field were there on Army business or as Army-owned visitors not essential to the conduct of the school.

On this the appellate court held: "While teaching and instructing may involve communication, such as could under certain circumstances be classed as commerce, the teaching and instructing done by the defendant as alleged was not among the several states or even an state to any place outside thereof."

Heads 9th AFSC

Brig Gen. Myron H. Wood has been appointed commander of the U. S. Ninth Air Force Service Command, replacing Maj. Gen. Henry J. F. Miller, who has been returned to his permanent rank of lieutenant colonel, as a result of reports of illness. The Col. Coffey, information, and reassigned to this country. General Wood assumed his new command before the invasion began.

Trends in Helicopter Development

Significant trends in helicopter design, construction and operation are evident at this stage:

- 1. Longitudinal as well as now appear to be as dangerous for the helicopter as for conventional aircraft. Blasts of steel tube construction with wood ribs, fabric covered, are comparatively flexible and strong. They throw off as much weight as 300 pounds of wood, but from balsa to mahogany, so into the ribs leads.
- 2. Normal flight currents do not affect a helicopter as much as a conventional plane. There isn't the quick change of altitude.
- 3. High wind tolerance of the helicopter must be made faster than normally because of the danger of loss of altitude.
- 4. High wind tolerance of the helicopter must be made faster than normally because of the danger of loss of altitude.
- 5. Many interesting applications will be found later, such as in development. So far there have been so many direct engineering problems that engineers have had no time for ultimate research.

The helicopter at the moment is the ideal craft for pilots who have always wanted to fly low, but have been barred of civil aviation. Since the Air, neither CAA nor Army has ruled on regulations for other aircraft that would apply to the helicopter. The helicopter, however, being the most maneu-

verable of all aircraft, must yield the right of way to all others.

Pilot training for helicopter flying is given familiarization flights to acquaint them to the helicopter. It is held in the safety wing gliders.

New pilots are being selected after 14 to 18 hours of dual instruction. They are pilot 10 to 12 hours, but not more than 18 hours.

Pilots with 1,000 or more hours of experience in one type of airplane have more difficulty in learning to fly a helicopter because of their automatic reactions. Pilots who have flown various types of planes make the workover with greater ease.

Most flyers have not been trained in a helicopter yet, but it is planned to bring some into the program to learn how they will react and how long it will take to teach them helicopter operation. Experts are of the opinion that it will be easier to teach automatic pilot equipment into a helicopter than it is into conventional craft.

The helicopters fly in weather that grounds all other types of aircraft. Capt. Jack E. Hengle, AAF command, Col. J. F. Gregory, of the Sikorsky plant, has flown in a snow storm with a 50-mile headwind in maintenance terrain.

New 'Copter Rescue Technique Developed

Contingent with the recent announcement by Sikorsky Division, United Aircraft Corp. of two new versions of the Sikorsky helicopter, both going into military service, the AAF Materiel Command announced development of a new helicopter rescue technique for evacuating wounded personnel from areas inaccessible to other means of transportation.

It is understood that the evacuation technique has already been put to practical use with the old Sikorsky YH-4 helicopter, in the rescue of a pilot downed in the Burma-India theater, carrying wounded men back from the front line area.

Technique—Demonstrated recently at Wright Field, Dayton, Materiel Command headquarters, the technique in its new form uses a new Sikorsky YH-4 helicopter equipped with two litter capsules, coffin-like streamlined containers, each accommodating one casualty on a stretcher. The capsules are suspended on each side of the helicopter fuselage.

In the demonstration, Col. J. F. Gregory, the Command's helicopter research expert and test pilot, entered an otherwise inaccessible wooded area near Wright Field,

stillations, leaves them little time for attention to the art of flying. They are often in danger of crash-landings in the loss of speed.

Blow and Suck—So the Artillery wants to protect its pilots by giving them planes that will require less attention in critical situations. Several light plane manufacturers, including Piper, are trying to develop what the Artillery wants. Fortunately, they have ten years of "foot proof" plane experimentation to draw upon. The experience will be a windfall for manufacturers, and for post-war private flyers who will want that type of slow and safe plane.

Performance on the ground is almost as important as is in the air. First requirement is that the flying jeep be able to get off in a minimum run on roads, meadows or any reasonably flat spot. In some circumstances, present models can get up in less than 100 yards, and the Artillery would like to improve on that, with flaps or any means at all. Landing must be accomplished in similar restricted places.

Practical Landings—Lesson pilots' training consists of, in addition to special fire control and observation work, precision landings, efficiency take-offs, cross-wind take-offs, barrier take-offs, forward and side slips, stopping turns, power landings, cross-wind landings, tail-high landing, one-wheel take-offs, take-offs into clambering areas, steep, flying, dragging areas, precision power and stunts.

Gas to Be Rationed To Private Flyers

Nelson to decide whether OPA or CAA will handle allocation of 75-cc airplane fuel.

The government has definitely decided it will ration 75-cc gasoline to non-scheduled air operations. It is up to Chairman Donald Nelson, of the War Production Board, to decide whether the Office of Price Administration will administer the ration, or whether authority will be transferred to the Civil Aeronautics Administration.

Charles J. Skowron, CAA administrator, recently wrote to Mr. Nelson requesting the transfer from OPA to CAA. Nelson could effect this change by amending the



Piper Jeep Takes Off. Photo shows artillery fire observer taking off from country road. Note that part of the run was around a curve. The Piper is a mere 500 pounds of canvas, tubing and plywood.

directive which originally authorized OPA to ration aviation fuel to private and fixed base operations.

No Real Restriction—OPA authorized local boards to ration the fuel through "B" coupons. But there was no real restriction, anyone could get as many of the coupons as he asked for.

Mr. Nelson was awaiting advice as this was written from OPA, from CAA, and from the Petroleum Administrator for War. He already had heard from William A. M. Burdick, assistant Secretary of Commerce, reiterating Mr. Stanton's request and his argument in favor of CAA. This letter in effect carried the weight of a recommendation from Jesse Jones, Secretary of Commerce, which has jurisdiction over CAA.

Special Problem—In summary, CAA claims that the rationing of aviation gas is a special problem requiring technical administration, that CAA's field organization is a ready-made setup to handle it expeditiously and on the basis of the on-the-spot information.

OPA will reply that if it is going to handle the nation's rationing of all goods, it must have complete and over-all authority. It will say that if one group is allowed to jump the track, especially to ration itself, more will want to follow the precedent.

Skowron considered the attitude of PAA to be a warning. Probably the Petroleum Administrator, having much bigger problems on his mind, does not see much who resources out the role of gas he gives to non-scheduled flying.

Preference Rating Order P-47 Amended

Relieves certain operators from much paper work on maintenance and supplies.

Airplane maintenance and supplies Preference Rating Order P-47 has been amended so that effective July 1, the following operators are relieved from considerable paper work and are put on CMP's quarterly quota basis: (1) certificated airlines; (2) foreign commercial airlines if approval was received from WPB on Form WPB-1147, or if approval was received during second quarter of 1944; (3) operators of planes based in Alaska, because air travel there is comparatively important.

All other operators—private, contract, fixed-base, etc., after July 1, will obtain parts and materials under Controlled Materials Plan Regulations Nos. 5 or 8A or CMPB-3A. Form 5 is for individual owners, Form 8A is for federal, state and municipal use. Form 9-A is for repair stations. These forms may be obtained from regional WPB offices, with instructions how to file them.

Amended—P-47 is so amended that it now covers supplies and facilities for the maintenance of airports and buildings thereon. If the work to be done involves less than \$500 of materials or equipment, the owner simply certifies to his supplier that he is acting under WPB Order P-47. If the cost is greater, he must apply to the regional office of WPB for a special allocation. This may be by letter.



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Manufactured in a wide range of types and sizes, Breeze Connectors are designed to meet practically every need in modern electrical control and communications systems. Produced in quantity to latest A-N specifications, these Connectors supplant the well known Bussie line of aircraft accessories that are playing such an important part in the United Nations' drive to Victory.

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Cutaway view of Breeze Connector showing simple design and intricate construction.

THE AIR WAR

COMMENTARY

Role of Aviation in Invasion Focuses Spotlight on Air Leaders

Eisenhower's deputy, Air Chief Marshal Sir Arthur Tedder, called "The Chief" by Americans as well as British, expected to go down in history as this war's outstanding tactician.

Now that the European invasion is well under way, and that its air aspects, despite unfavorable weather, literally are off to a flying start, a few glimpses of some of the air leaders seem to be in order. During the past few months full length pictures have come out regarding most of the top men in the Allied strategic air forces—Air Chief Marshal Arthur Harris, Lord Gen "Toomy" Spaatz, Lt. Gen "Jimmy" Doolittle, Maj Gen "Fred" Anderson and Maj Gen Hugh Kester in England, and Lt. Gen. Sir Baker and Maj. Gen. Nathan Twining in Italy.

Now that strategic air power has so significantly earned out its appointed task of weakening the German war potential for the present combined operations, the spotlight has now shifted to tactical air power.

▶ **Anglo-American Air Team**—Little needs to be added to the many excellent articles which have appeared since the first of the year concerning one of the top airman of them all, General Eisenhower's deputy and overall air commander, Air Chief Marshal Sir Arthur Tedder, called "The Chief" by his men, who, British and Americans alike, have an unbounded enthusiasm for him. It is more than likely that history will award Tedder the title of this war's No. 1 air tactician. Eisenhower's top commanders for air, land, and sea are all Britishers.

His tactical air commander is Air Chief Marshal Trafford Leigh-Mallory, another top-notch air expert in the use of air power in cooperation with ground troops. Leigh-Mallory played an important part in defeating the Luftwaffe in the battle of Britain, and soundly trounced Goering's bombers and fighters again in the air aspects of the Dimple raid. He is the commander of the Allied Expeditionary Air Force (AEAF), which is made up of the British 2d Tactical Air Force (TAF) and the U. S. 8th Air Force.

The deputy commander of AEAF is Maj. Gen. Hori S. Vandenberg, General Vandenberg assisted in the planning and organization of the air forces for operations in North Africa and became chief-of-staff of the Twelfth Air Force, seeing action in the Tunisian and Sicilian campaigns, after which he was appointed a deputy chief of the Air Staff, Washington. He is 41 and regarded as a highly capable air officer.

▶ **Desert Team**—The RAF Second TAF is headed by Air Chief Marshal Sir Arthur Coningham, whose nickname "Maisy" is a distortion of Mason, as his enthusiasm and military training were received in New Zealand. His former command in the Mediterranean was the First Tactical Air Force (under Tedder), and before that was formed he was part of the highly successful Allied air-ground team which worked through Rommel's lines and chased the Germans and Italian out of Libya and Tunisia—Coningham, Montgomery, Breerton. Now they are working together again, on a bigger scale than ever.



Vandenberg

Coningham



Sweeney

Beyer

General Montgomery is commander of the British First Army Group, and Lt. Gen. Breerton commands the U. S. Ninth Air Force. The liaison officer between the Ninth and the Second TAF is another member of the Libyan desert team—Breerton's chief of staff, the old Ninth Fighter Command, Brig. Gen. Aubrey C. Stinchfield. General Breerton also has retained his former chief-of-staff, Brig. Gen. Victor H. Strickland.

▶ **TAF Priorities in 1944**—Much of the striking power of the old Ninth was concentrated in strategic bombing with Liberators, and until the break-through at El Alamein, with Mitchells. This fact has somewhat obscured General Breerton's great interest in tactical air power, an interest stemming back to the early summer of 1914, when Colonel Mitchell promoted Major Breerton from the command of the 13th Aero Squadron to the leadership of all "attack operations" in its sector of the line then held by the 8th French Army.

Shortly after this, Mitchell declared: "Our low flying system of attack is effective, involving of both hands in the field of battle, and night patrol operations, are now and efficient operations in air tactics on the Western front." Much of this was worked out in practice by Breerton, who like his chief, was at that time regarded as something of a "radical" in air warfare.

The tactical value of dive-bombing, of dropping fully armed troops by parachute behind the enemy lines, and in general, the use of tactical aviation, which "acts by itself directly against the enemy aviation and its ground troops"—all this was clearly grasped by Mitchell, Breerton and other air officers associated with the great Battle of Britain. Maj. Gen. Ralph H. Beyer, General Breerton's present deputy commander of the Ninth Air Force who, as Major Beyer, was in charge of the 1st Observation Squadron under Mitchell (See Don Levine's

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Today, "Flying Horsepower" incorporated in the new super aviation fuels, is boosting the performance of U. S. warplanes. It's adding speed and maneuverability to fighters, and increasing the loads, range and ceilings of bombers.



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After Victory, this extra fuel power will be translated into tons of production flying. It will open up new possibilities for designers, help point the way to speedier air transports and lighters carrying heavier payloads on longer flights.

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ROCKET-FIRING AIRCRAFT

Details have just been released of a weapon first used a year ago when a British Coastal Command pilot attacked a German merchant ship in a *Wingmaster* fitted with a *Bombfighter* equipped with rocket projectiles and made six direct hits. Picture below shows ground crew loading rocket projectiles into the guide rails beneath the wing of a *Bombfighter*. Four are carried under each wing and can be fired in pairs or all eight together in salvo. Photo above shows projectiles just after they have been launched.



Miniflow *Pioneer* of Air Power, chapters 4-6).

New Leaders—A new development in the use of tactical air power is found in the operation of the Tactical Air Division, a subordinate unit of the Tactical Air Force set up to operate with each field army, with air and ground staff planning operations together, daily, in the same office, and in the case of Montgomery and Cunningham literally in the same tent. One of these divisions is the Ninth Tactical Air Command, headed by Maj. Gen. Elwood R. Quessada (46 years old), who had previously been a Wing Commander of the Fighter Command, First Air Force, Mitchell Field, under Gen. Ralph Royce.

Another Tactical Air Command

is under Brig. Gen. Otto Paul Weyland (42), who had been Director of Air Support in the Headquarters, AAF during 1942, and in 1943 was chief of the Operations and Program Division at the office of the Asst. Chief of Air Staff, Operations, Communications and Requirements (General Craig). These are the men who direct the thousands of daily sorties of Mustang, Lightning and Thunderbolt fighters and fighter-bombers in their secret missions of shipping and airborne troops, and smashing attacks against major transport, supply dumps, tanks and the case of Montgomery and Cunningham literally in the same tent. One of these divisions is the Ninth Tactical Air Command, headed by Maj. Gen. Elwood R. Quessada (46 years old), who had previously been a Wing Commander of the Fighter Command, First Air Force, Mitchell Field, under Gen. Ralph Royce.

Tactical Bomber Operations—The TAP also has its Bomber Command, headed by 32-year-old Brig. Gen. Samuel E. Anderson

It was Sam Anderson, who with the encouragement of Brig. Gen. Robert C. Chandler, commander of the 8th Air Force Air Support Command last summer before it was merged with the Twentieth Ninth, re-trained his B-26 Marauder Wing in fast medium altitude sweeps which have since been a seasonal feature of American air activity over Europe. Bombing accuracy has been amazing, general destruction terrible, and operational losses phenomenally low.

As General Chandler remarked after the completion of the first experimental mission—against the deadly fighter base at Abbeville—"It's just the beginning of continuous operations to crash the German Air Force." General Anderson now has at his disposal in addition to the Marauders, a growing number of new-type Douglas Hornets, the A-26G solid-nose attack version and the A-26J light bomber version.

Other TAP Commands—The Imperial Aviation Engineer Command, which must pull miracles out of the hat in the invasion advances, is under Brig. Gen. James B. Newman, Jr., the IX Service Command under Brig. Gen. Myron R. Wood; the Troop Carrier Command, which played such a spectacular part in the early stages of the invasion is under Brig. Gen. Paul L. Williams, and the Air Defense Command, alert for any counter-attacks by the Luftwaffe on our ports and bases in England, is under Brig. Gen. William L. Richardson. In most cases, Air Chief Marshal Cunningham has opposite numbers in his Second Tactical Air Force. Together they make up the ARAF, spearhead of the invasion of Europe.

NAVIGATION



SIAMESE WING:

A combat force recently shown the fresh *Siamese* 112 glider tug in action and the silhouette above was drawn for the British publication, *Aeroplane*. Actually, the ship is two H-119s joined and a BMW 400 radial engine added. Extra fuel tanks were placed under the wings, outboard of the engine.

PERSONNEL

Col. Anne S. Allen, a retired U. S. Army Air Force officer, has become division coordinator of the Tuscon Division of Consolidated Vultee Aircraft Corp. He was with the AAF 26 years and was first commanding officer of Davis-Monthan Field, Colorado. After a responsible for the coordination of the production of the Tuscon division with that of the parent plant at San Diego. He has served as the European Theater of Operations during this war.

Zeno Wall, Jr., has resigned as chief engineer of Fairchild Aircraft, Burlington, N. C., to join the American Enka Corp., as the Personnel Department. He has been supervising the Fairchild recreation program, in addition to his other duties.

Paul E. Probst is the new operations manager of Adair Precision Products Corp., and has been in the post-war minded company since 1945. He has 10 years of engineering experience. He has been chief engineer of the company's interest in post-war exploration of household utility markets.

Cleveland, Fla. Association with Adair outlines the company's interest in post-war exploration of household utility markets.

Stanley E. Haggard has been named Dayton representative of the Jordanian Aviation Corp. He formerly was associated with the maintenance and repair of the Air Force Command, Patterson Field.

Erig. Gen. Paul Haggard, veteran of 39 years in Marine aviation, has been detached from the First Marine Air Wing command and ordered to duty at Headquarters, 1st Marine Corps. He was chief of staff for operations by all United Nations aircraft during the New Georgia campaign.

Howard Field, aircraft engineer, has been released as consulting engineer by Aeroquip Corp. of Jackson, Mich. He recently was associated with North American Aviation. Field is engaged in perfecting details in Aeroquip's newly developed "hydraulic" system to be used on aircraft hydraulic systems for protection of all aspects, or isolation of damaged circuits to permit other control lines to continue in operation.

Dr. Maurice Fehrling, an official of TACA Airways in Honduras, has arrived in the country.

William A. Cochran, president of Western Airlines, has been elected president and chairman of the board of Island Air Lines. Lee M. Swarthout, Paul H. Adams, and J. J. Taylor were elected directors of Island.

A. K. Johnson (below) is new vice manager of the Miami Division of C. S. & G. I. Co.

John A. Cochran, president of Western Airlines, has been elected president and chairman of the board of Island Air Lines. Lee M. Swarthout, Paul H. Adams, and J. J. Taylor were elected directors of Island.

Gilbert K. Brown, chief materials engineer for American Airlines, Inc., has been appointed chairman of the Coordinating Laboratories Research Committee, a general division of the Coordinating Research Council, sponsored by the American Petroleum Institute and the Society of Automotive Engineers.

Don L. Upguth, formerly supervisor of reservations and ticket office for American Airlines, Inc., has been named vice manager at San Antonio, Tex.

Don L. Upguth, formerly supervisor of reservations and ticket office for American Airlines, Inc., has been named vice manager at San Antonio, Tex.

Upguth has been in the airline business since 1928 and recently spent some time in Mexico training personnel for American Airlines de Mexico.

Gen. Col. Edward K. Morris, who left the Industrial Relations staff of Douglas Aircraft Co. for the Army in 1940, has been transferred to an important command in the Pacific. He was with the Army in the Pacific, where he was an airfield pilot for the 1st Marine Air Wing and the 1st TAF. Morris, formerly of TWA, after leaving Douglas, Colonel Morris



SPERRY AID PROMOTED:

Maj. James E. Webb, assistant secretary-treasurer of Sperry Corp., and vice-president of the Sperry Gyroscope Co., has been promoted from captain in the Marine Corps, in action. He received his gold star letters from Col. Christian F. Scholt, commanding officer, Fourth Marine Aircraft Wing, Major Webb completed flight training at Pensacola, Fla., and is on duty with a unit of Colonel Scholt's command at Cherry Point, N. C.

Webb began with the Materiel Command as a civilian employee at headquarters of the Western District developing internal security measures in aircraft plants. When he received his commission he served as intelligence officer for the entire Materiel Command at Wright Field.

John Swan, Jr., veteran Washington newspaperman, has been named public relations director for the Kingsman Promoter Division of Bell Aircraft Corp. Recently Swan has been in the information office of Selective Service headquarters and before that was widely-known as a Washington correspondent, reporter and writer.

Philip G. Moss and Henry F. DeBru have been appointed new directors of the H. L. Harvill Manufacturing Co., Vernon, Calif., producers of aluminum die casting, pressure castings, and permanent mold castings. H. L. Harvill Manufacturing Co. is a subsidiary of the Harvill Group, which is a subsidiary of the Harvill Group, which is a subsidiary of the Harvill Group.

George W. Garris has been appointed sales manager of the Aero Products division of Tulsa, Ind., Mead-Well Co. Other appointments include J. K. Carlson as chief engineer of the division and J. J. Williams as superintendent of shop and production.



Richard S. Huested

Richard S. Huested (photo), service engineer, sales engineer and manager of public relations for Wright Aeronautical Corp., of Paterson, N. J., has been appointed manager of the Washington office of Curtiss-Wright Corp. He succeeds S. Fred Johnson who is now on leave of absence as a lieutenant commander with the Naval Air Transport Service. Huested has been associated with several large airlines and in 1935 was assistant power plant engineer with the Bureau of Air Commerce, now CAA.

Hall L. Hühner, vice-president and chief engineer of Lockheed Aircraft Corp., was given an honorary degree by the College of Engineering, Kansas. He received the degree of Doctor of Science at the college where he was at one time a student.

G. S. Balcan, former plant engineer of Lockheed Aircraft Corp.'s Factory A, becomes plant engineer of the entire organization under the new consolidation plan. Assisting him will be J. Russell Ward, who until now has been plant engineer of Factory B.

Vera Manner (photo) is the first woman to be appointed by Delta Air Lines to head a traffic office. She has been named selling manager for New Orleans & E. Washburn, general traffic manager of Delta, and be made the appointment in recognition of Miss Manner's services in the New Orleans office since Delta Air Lines started in route into that city Oct. 19.



Arthur J. Brown, a member of the board of directors of Consolidated Vultee Aircraft Corp., and president

and general manager of the National Tool Co., New York, died last week fifteen years ago by the death of a program for building the trucking industry in Russia for the Soviet government.

Comde. John J. Kirk has been detached from the Investigation Division, Navy Bureau of Aeronautics, where he has been on duty in the air stations branch.

Reg. Gen. John R. Harshaw has been assigned to command the First Fighter Command of the Army Air Forces, succeeding Reg. Gen. O. Brown, who has gone overseas Division. Harshaw recently returned from a tour of duty in England and North Africa.

Mervyn Whitlock has been named chief aircraft engineer of American Airlines, Inc., and **Glen H. Brook** has become chief engineering pilot. Brook succeeds M. G. Reed, who is now director of flight engineering.

Edward A. Ladson has been advanced to the position of chief tooling engineer in a reorganization of the tool engineering department of Boeing Aircraft Co., Corp. **William Gorman** and **George J. Spence** have assumed the duties of aircraft tool engineers. Ladson was formerly in charge of Ladson-Mitchell Engineering Co., of Los Angeles.

John S. Thomson has been elected president of Zimmern-Thomson Corp., of Island City. The corporation manufactures 180-2500 VEEV motor constant speed propellers for light and medium powered planes.



Thomson, a graduate engineer, has been in the aeronautical business from the time he became the country's youngest licensed pilot. The AAF says the propeller which is expected to be used by America's future private planes.

Capt. Beaman W. Wright has relieved **Capt. Joseph F. Belger** as aide to the Secretary of the Navy for Air.

E. A. Ferrell has been named assistant general sales manager in charge of field and office operations for Wash-Kalpan Corp. **R. H. Legg** has been appointed assistant general sales manager in charge of the commercial and contract divisions.

H. R. Reeves, formerly Milwaukee district traffic manager of Duquesne



SET NORTHERN RECORD: Capt. Hugh C. Worthington, United Air Lines' pilot, has established what is believed to be the fastest flight on record between Anchorage and Seattle. He flew the 1,590 miles in six hours and 43 minutes as part of United's regular coast-to-coast schedule for the Air Transport Command.

Central Airlines, has become promotion director of WBSZ radio station in Milwaukee.

Van Adolphe Marc A. Muecher, whose promotion from rear admiral was confirmed on May 25, has been awarded the Gold Star in lieu of the second Distinguished Service Medal for his direction of air attacks against the Marshall Islands, Truk and the Tuamotu Islands. He was awarded the Navy Cross because he piloted the NC-1 on the first Navy trans-oceanic flight in May, 1929. In addition, Admiral Muecher was commanding officer of the USS Harriet when she sailed as carrier for the planes which bombed Tokyo.

S. A. Nade, executive assistant to Ralph Hall, director of aircraft production for Canada, died June 1 in Ottawa, as a result of injuries suffered in a recent car accident. He served with the Royal Flying Corps in the World War, and has been with the Department of Munitions and Supply at Ottawa since 1941.

Col. W. Fiske Marshall, a former vice president of Northwest Airlines, has been named commanding officer of a Marine air group at Corvallis, Ore. Colonel Marshall will train both pilots and crew to man planes serving in the South Pacific theater air transport group. He commanded this air section during the early stages of the Pacific war.

A TOAST TO THE ACES WHO NEVER FIRE A SHOT



Among features are landing platform and safety records. — the East PT 31

173 Times Around the World Without a Fatal Accident!

SAFETY for Army pilots during primary and basic training has been achieved to a remarkable degree in all the Civilian Contract Flying Schools. One large school has not had a fatal accident in nearly three years.

Averaging the entire program, the accident rate is so low that 173 trips around the world would not produce a single fatality. That calls for congratulations.

* * *

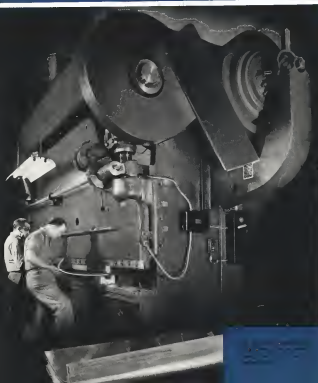
Shell is gratified to have had a part in this splendid record through the active use of Shell aviation gasoline and Shell lubricants in planes employed in training United States Army Air Forces Cadets.

SHELL OIL COMPANY, Incorporated



R-301 *the Aluminum Alloy* CORROSION -

that is **STRONG,** **RESISTANT, WORKABLE**



PLANE DESIGNERS wanted a higher strength aluminum alloy for increased performance. Aircraft shapemen wanted an aluminum alloy of good workability in order to reduce production time. Users of aircraft wanted an aluminum alloy with good corrosion resistance, to withstand any atmosphere and climate.

Reynolds' Metallurgists, reading these needs, treated R-301.

R-301 is a high-strength aluminum alloy core, integrally bonded with a corrosion-resistant, medium-strength aluminum alloy cladding. The core and cladding alloys respond to the same heat treatment—resulting in a final product possessing high strength.

R-301 is the *solovina heat treated temper* is stable and more workable than any other high-strength aluminum alloy in the corresponding temper—thereby eliminating costly post-forming heat treatment and consequent distortion of aircraft parts.

R-301 is being produced in three tempers, suitable for a wide range of applications. Inquiries are invited. Reynolds Metals Co., Aluminum and Pure Div., Louisville, Ky.

(Upper right) Heavy, bending rolls, forming an inner bond for the plane's component R-301 can be cold-rolled to shape.

(Lower right) R-301 drills and cuts to sharp, accurate corners. The hard surface cladding reduces the hazard of accidental scratching.



REYNOLDS

The Great Alloy
ALUMINUM



More than 1000 "Coed" trainers in the first twelve months of production . . . and more than 1000 to date—such is the remarkable production record Fleet Aircraft, Limited has achieved in the manufacture of the plane that has been adopted as the standard primary trainer of the United Nations.

Pre-war experience, modern plant facilities, and a determination to meet the

demands of war . . . these are a few of the contributing factors that have made Fleet Aircraft, Limited a leader in the aviation field.

Tomorrow, the same experience, skill and practical knowledge which has enabled Fleet Aircraft, Limited to meet the challenge of war will be available to serve the aviation needs of a world at peace.

FLEET *Aircraft* **LIMITED**
PORT ERIL, ONTARIO

NACA Tunnel Tests 80-Foot Planes

\$7,000,000 Ames Aeronautical Laboratory at Moffett Field is fitted with six 5,000 hp. motors.

A new wind tunnel, part of the Ames Aeronautical Laboratory, dedicated recently at Moffett Field, Calif., is designed to test complete airplanes with a wing spread up to nearly 80 feet and large-scale models of even larger craft now in production.

Built by the National Advisory Committee for Aeronautics, the \$7,000,000 tunnel is fitted with six 5,000 hp. Westinghouse motors driving 40-foot six-blade propellers and weighing 27 tons each. The tunnel is 40 by 66 feet at the peak where tests are conducted and at the point where the motors and fans are located, 30 by 126 feet.

Results—Rear Admiral Ernest F. Poe, of the Navy Bureau of Aeronautics, said the Ames Laboratory including three other smaller wind tunnels, several flight research units and a number of mechanical and instrument units "already has made contributions which have shortened the war."

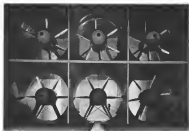
The tunnel was named for the late Dr. Joseph S. Ames, former chairman of the NACA and one-time president of Johns Hopkins University. The laboratory was dedicated by Dr. William F. Durand, of Stanford University.

Dedication—Dr. Jerome C. Hunnaker, of Massachusetts Institute of Technology, and NACA chairman, put the tunnel into operation at the dedication ceremonies with a new type scout bomber built by Douglas placed in the test section.

Leaders of the aeronautical industry from the West Coast and elsewhere, as well as high ranking Army and Navy officers attended.

Errors Detected—With possible margin of error reduced to zero, engineers can forest all unwanted characteristics and supply corrective measures down to full size airplanes. The huge tunnel, at the same time, will act as a check on smaller wind tunnels in which only models or parts of planes can be tested. With margin of error, if any, between model and actual plane tests determined, large-scale models of the biggest planes can be tested with complete accuracy.

The full-scale tunnel dwarfs even the NACA tunnel at Langley Field, formerly largest in the world, which could be placed in



Inside Moffett Field Wind Tunnel: This striking photo shows the six propeller-motor-driven units of the 40 by 66 foot wind tunnel at the Ames Aeronautical Laboratory, Moffett Field, built by the National Advisory Committee for Aeronautics. Note relative size of workman.

one end of the new tunnel. Total circuit length of the continuous tunnel, constructed of steel framework with cement asbestos covering is over two-fifths of a mile.

Operated by Remote—Despite the size of the installation, starting or stopping the battery of six motors is accomplished merely by pressing a button, through use of a modified Kresner control system, which synchronizes operation of the motors over a wide range of speeds.

Access to the test chamber is

controlled by a pair of hydraulically operated doors. A 110-foot open traveling bridge crane hoists the plane through the doors and places it on three streamlined struts, connecting to a balance system. Beneath the chamber, lift and drag on the plane are automatically recorded. The plant testing section is 63 feet off the ground to the easter line, with room beneath for offices, garages, maintenance and stock departments.



Open Largest Wind Tunnel: Dr. Jerome C. Hunnaker, chairman of the National Advisory Committee for Aeronautics, pressed the button which started six 5,000 motors driving 40 six-bladed prop fans at the opening of the world's largest wind tunnel at Ames Aeronautical Laboratory, Moffett Field, Calif.



TOP CANADIAN AIRCRAFT PRODUCTION MEN:

Leaders of Canada's aircraft industry recently tested the Canadian Vickers, Ltd., plant at Montreal where Catalina PBY 3A amphibian craft are made for Canada, Great Britain and the United States. Left to right are H. J. Symington, president of Trans-Canada Air Lines, Benjamin Franklin, Canadian Vickers aircraft operations director, MacDonald and Supply Minister C. D. Moore, Ralph Stange, Canadian Vickers assistant factory manager, and Ralph P. Bell, director general of Canada's aircraft production.

New Grumman F7F Is in Production

Grumman's new F7F—twin-engine Navy fighter—is in production line, the annual report of LeRoy B. Grumman, president and chairman of the company, reveals. The F7F, first, twin-engine carrier fighter, has been built under contract by the Navy and details are restricted. The company has been notified of cutbacks in fighter production and output will be "slightly reduced," he said.

Grumman informed stockholders that the company had exceeded Navy schedules each month last year. The Long Island plant has been in production on the Navy's Bellcat fighter, which accompanied the Wildcat last year. A new Wildcat model is now being made by Eastern Aircraft Division of General Motors—the FM-3.

Green Sales Double 1945—Based on dollar volume of gross sales, 1945 production virtually doubled 1944 figures, Grumman said, with gross sales last year totaling \$378,689,000 compared with \$143,155,393 in 1944 and only \$21,838,661 in 1941 and \$3,111,245 in 1940.

Net income for 1945 is reported at \$4,833,281, after provision of \$23,258,234 for all taxes and ben-

efit credit of \$1,925,000 for post-war tax refund and \$1,500,000 transferred to the reserve for post-war readjustment. The income is equivalent to \$9.14 each on 506,060 shares.

After Reorganization Talks—The



MITCHELL ASSEMBLY LINE:

B-26 bomber center section, a component of one of the last Mitchell to be built at North American Aviation's Inglewood, Calif., home plant, being lifted from a jig by a carrier and guided onto rails of the plant's overhead conveyor where it will be mated to rest of assembly.

income repeats are after renegotiation conferences and reflect the result of these conferences, which are expected to be final, Grumman said.

Balance sheet shows current assets of \$99,088,158 and liabilities of \$66,269,791.

Rangers Do 900 Hrs. Before Overhaul

Nine hundred hours of operational service before overhaul, the equivalent of 150,000 miles of flight in the P-51C Cornell, is reported for many of the six-cylinder, inline, aerocooled aircraft engines made by Ranger Aircraft Engine Division of Fairchild.

A recent check by field representatives in the Texas-Oklahoma training area, covering 254 engines pulled for overhaul at 18 fields, showed the average Ranger gave a bonus of 23.6 percent more service than the 800 hours expected of it before overhaul.

35 Percent Reach 900 Hours—Of the 254 engines checked in the period covered, 35.4 percent reached the 900-hour mark, the limit the engines are permitted by the AAF to operate. The 800-hour mark, the point at which the engineering officer checks the engine for performance, was passed by 83.1 percent of the engines and the average for the 254 was 742.86.

FINANCIAL

Higher Operating Costs Offset 15% Rise in Airline Revenues

Income for first half of 1944 expected to exceed \$66 million, reflecting increase in planes and new traffic records set for period.

Domestic airline gross operating revenues for the first six months of 1944 are expected to exceed \$81 million. This would be an increase of more than 15 percent over the \$67.3 million reported in the 1943 period. The improvement in revenue figures, however, will be offset by higher operating expenses, which apparently were rising substantially in the first quarter of the year.

The increase in the number of planes in domestic service should double the domestic operating expense, as new traffic records for the six-month period. Revenue passenger-miles are likely to exceed \$48.6 million, compared with 72.3 million in the first six months of 1943.

Revenues—Each traffic would produce passenger revenues of \$48.2 million, a substantial increase over the \$38.6 million reported during the first half of last year.

While estimates indicate a 26 percent increase in annual poundage flown, the lower mail pay rate will result in revenues of around \$14.1 million. This would be a gain of some 10 percent over the \$11.8 million received in the 1943 period.

Air Express—Despite a probable increase of more than 7½ percent in air express pound-miles flown during the six-month period, revenue from express shipments are likely to be only slightly higher than the first half of 1943, due to a decline in average rates. Based on express pound-rates of 13.27 million, revenues for the first six months this year will approximate \$4,005,000 as compared with \$4,083,000 a year ago.

Revenues from miscellaneous and incidental sources are expected to bring in about \$1,617,000, as against \$1,611,000 in the first half of 1943.

A break-down of domestic operations for the six months ending June 30, 1944, compared with the 1943 period, follows:

| Item | 6 mos. Actual 1943 | 6 mos. Forecast 1944 |
|--------------------|--------------------|----------------------|
| Total Revenues | \$67,277,000 | \$79,448,000 |
| Operating Expenses | \$42,000,000 | \$47,000,000 |
| Net Income | \$25,277,000 | \$32,448,000 |
| TOTAL | \$67,277,000 | \$79,448,000 |
| Net Income | \$25,277,000 | \$32,448,000 |

Source: Financial Management, Vol. 1, No. 1, 1944. Figures are in millions of dollars.

Jacobs Aircraft Reports Sales

Jacobs Aircraft Engine Co. paid its president, C. J. Abbott, \$35,319 in salary in 1943. In addition, Abbott received \$18,560 from Ford, Bacon & Davis, Inc., which firm has a management consulting agreement with the company.

Albert B. Jacobs, vice-president, got \$35,319, and J. Andrew Harris, 2nd, chairman, received \$39,136.

Donald F. Turner, vice-president, was paid \$25,860 and an additional \$3,740 from Ford, Bacon & Davis, Inc.

Elected Director—Abbott was elected a director of Ford, Bacon & Davis, Inc., on Feb. 3, 1944. Under his contract with the company for managerial and engineering services, Ford, Bacon & Davis, Inc., was paid \$100,494, and Pinkerton National Detective Agency received \$28,312 for investigation and plant protection.

Company showed sales of \$65,915,322, but refunded \$3,093,000 to the U. S. Army Air Forces. Sales costs were \$54,224,216, leaving a gross profit on sales of \$9,691,106.

Expenses—After deducting \$1,682,434 for administrative, engi-

neering, field service, and advertising expenses, the profit from operations amounted to \$8,008,671, which was increased to \$8,287,456 by income from other sources.

Net profit before federal and state income taxes, after deducting an "other expense" item of \$234,138, amounted to \$6,055,326. Federal and state income taxes totaled \$6,477,832, leaving a balance of \$1,585,693, which was reduced by \$285,891 by provision for contingencies in connection with contract terminations.

After a credit of \$296,973 for federal income profits, the company transferred \$1,490,938 to earned surplus.

Bendix Reveals GM Owns 18.9% of Stock

Bendix Aviation Corp. received \$136,724 for the year ended Sept. 30, 1943, the company's annual report to the Securities and Exchange Commission revealed. Charles A. Mearns, vice-president, got \$47,749 for 1943 and S. O. Thomas, vice-president, received \$72,930.

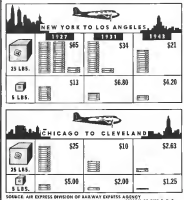
The annual report showed General Motors Corp. owned 356,590 shares of the company's common stock, representing 18.9 percent of that stock outstanding.

Other Outlay—Other amounts paid out by the company during 1943 included:

Raynor, Kent, Willard & Co., management engineers, \$57,751; Capital & Associates, Inc., public relations counsel, \$48,899; Cassels, Potter & Bentley, legal counsel, \$42,423; General Motors Institute, Executive Training Program, \$25,067; Haskins & Sells, auditing, \$20,900; Hughes, Hubbard & Brown, legal counsel, \$127,423, which includes fees paid for services rendered prior to the fiscal year; J. B. Martin Machine Co., \$15,667; Haskins & Sells, auditing, \$19,900; Hughes, Hubbard & Brown, legal counsel, \$127,423, which includes fees paid for services rendered prior to the fiscal year; J. B. Martin Machine Co., \$15,667; Haskins & Sells, auditing, \$19,900; Hughes, Hubbard & Brown, legal counsel, \$127,423, which includes fees paid for services rendered prior to the fiscal year; J. B. Martin Machine Co., \$15,667; Haskins & Sells, auditing, \$19,900; Hughes, Hubbard & Brown, legal counsel, \$127,423, which includes fees paid for services rendered prior to the fiscal year.

The company's consolidated profit and loss statement for itself and its subsidiaries for 1943 showed gross sales and other operating income of \$916,753,464, less retroactive price reductions of \$96,243,230. Cost of goods sold was \$67,863,383, leaving a gross profit from operations of \$134,626,851.

DECREASE IN RATES FOR TYPICAL AIR EXPRESS SHIPMENTS



RATE CHART:

Chart issued by Air Express Division of Railway Express Agency as those program made in decreasing air express rates on two types of shipments, one transcontinental flights and the other a shorter route in the eastern part of the country.

service and administrative expenses, totaled \$134,659.83. Net income before provision for federal income and excess profits taxes totaled \$87,732.361, leaving net income for 1942 \$14,722.704.

Cessna Stock Issue

Cessna Aircraft Co. stockholders approved an increase in authorized capital stock from 500,000 to 1,500,000 shares and also approved elimination of a restrictive provision described in a proxy statement, from articles of incorporation and by-laws. Directors at their recent meeting passed a confirming resolution declaring a stock dividend of three for share to stockholders of record June 13, payable June 30.

Financial Reports

United States Plywood Corp. declared regular quarterly dividend of 30 cents a common share and \$1.10 a share on preferred. The common dividend is payable July 20 to stockholders of record July 10 and the preferred dividend is payable July 1 to stockholders of record June 20.

Briggs Manufacturing Co. and its domestic subsidiaries reported a net profit of \$5,239,351 for 1942, after a reserve of \$1,996,000 for estimated Federal income and excess profits taxes, \$2,889,000 reserve for plan noncompliance and other costs arising out of the war and provision for other contingencies and reorganization. The earnings are equivalent to \$1.69 a share and compare with \$1.61-1.40 earnings, or \$3.15 a share for 1941.

P. A. O. Smith Corp. and wholly owned subsidiaries for the quarter to April 30 showed a net profit of \$2,694,017 or \$4.93 a share, subject to reorganization, after \$9,388,807 taxes. This compares with a net of \$3,021,375 or \$7.48 a share after \$14,466,667 tax charges for the April quarter a year ago.

Glenn L. Martin Files SEC Report

Glenn L. Martin, president of Glenn L. Martin Co., was paid a total of \$76,068 for 1942, according to the company's report to the Securities and Exchange Commission. The sum included \$13,368 in pension fund payments.

Joseph T. Hartson, vice-president, was paid \$37,995, of which \$7,515 represented pension fund payments. In addition, he received 500 shares of stock reported to be worth \$5,212 at the time of issuance.

Harry F. Veltner, vice-president, received \$31,812, including \$6,172 paid to the pension fund in his behalf. He also received 480 shares of stock with an indicated value of \$6,680 at the time of issuance.

Accountants—The company paid Shulman & Sells, accountants, \$41,526 for services during 1942.

Jones, Day, Cockley & Nevins got \$140,450 for legal services and an additional \$27,588 was paid to the law firm of Marbury, Council & Williams.

William J. Sullivan, trading as Navitus Contract Delivery, was paid \$88,511 for trucking services. Sherman, Haland & Boyce, engineering firm, received \$142,584 for services, and an additional \$63,194 was paid for engineering services rendered by Johnson, Cushing & Nevell.

Profit and Loss—Gross sales totaled \$45,425,523, with operating costs of \$33,962,543. Leaving a profit from operations of \$11,462,980. Other income brought the profit to \$12,324,737.

Income deductions amounted to \$7,679,599, the largest item being \$7,000,000 for contingencies being net income before taxes to \$46,655,137.

Federal income tax, state, excess profits tax and State of Maryland income tax, plus certain federal and state tax adjustments, totaled \$6,161,101. Deducting a post-war refund of excess profits tax of \$5,852,000, net income for 1942 was \$11,212,036.

TRANSPORT

Northeast, Eastern Applications For N.Y.-Boston Route Approved

CAB decision establishes parallel competition with American and permits TWA and United Air Lines to enter Boston from Pittsburgh and Cleveland respectively.

By DANIEL S. WENTZ II

American Airlines' exclusive right to air traffic between New York and Boston was lost last week by a decision of the Civil Aeronautics Board which establishes parallel competition between those cities by Northeast Airlines and Eastern Air Lines, and simultaneously introduces Transcontinental and Western Air and United Air Lines into Boston from the west.

Specifically, the decision on the hotly contested New York-Boston case sustains:

- 1 Designation of Boston as the terminal point for Eastern's AM 3 and AM 4, replacing New York.
- 2 Establishment of a new route, AM 85, between New York and Boston, awarded to Northeast.
- 3 Service to Boston from Cleveland, Ohio, via Hartford, Conn., by United Air Lines over a new route, AM 66.

AM 67, a new route from Pittsburgh to Boston via Williamsport, Pa. and Birmingham and Albany, N.Y., to be flown by TWA.

The case confirms, at first, the precedent set by CAB in the North-South California case, in which parallel competition was installed between San Francisco and Los Angeles by three carriers.

The Board gives three lines opportunity to participate in the lucrative New York-Boston traffic, and recognizes the importance of Boston as a trans-Atlantic terminus by pulling two transcontinental lines that city from the West.

Doctrine of Presumption Attached—Board Members Harlow Heath and Oswald Ryan, in a concurring opinion, attacked the so-called "doctrine of presumptions" expressed by the Board in the North-South California case. This doctrine states that "since competition in itself presents an incentive to improved service and technological development, there would be a strong, although not conclusive, presumption in favor of competition on any route which offered sufficient traffic to support competing services without unreasonable increase in total operating cost."

Heath and Ryan objected to using this presumption doctrine as a substitute for an affirmative finding that competition is necessary to fulfill requirements of convenience and necessity in a given case.

Warner Dismisses—"If the technique evolved for implementing that policy should become laden with presumptions as substitutes for facts, and prima facie cases as substitutes for inquiry, economic controls established as safeguards may be seriously weakened and the administrative process rendered less able to perform its maximum service to an important national development," Heath and Ryan said.

Vice-Chairman Edward Warner dismissed from the majority decision, holding that United's entry into Boston should have been through New York with a view to obtaining greater utilization of aircraft. United's operations, as presently established, will require separate planes to serve New York as the terminus for AM 3 and Boston as the terminus for the newly established AM 48.

Rebuke—The decision provides that Northeast shall not serve



GREAT LAKES-FLORIDA HEARING OPENS:

First session of the Civil Aeronautics Board's hearing on applications for routes between the Great Lakes region and Florida were held last week before Examiner Ross F. Neumann. Indications were that the hearing would be over in two weeks instead of

the five or six first expected. About 100 airline counsel and spectators were on hand as the meeting opened. In the picture Alexander C. Dick of Colonial Airlines is standing at right. Neumann sits at right foreground behind a table piled high with exhibits.



UNITED INSTALLS LOADERS:

Cleopatra of the 4,000-ton cargo elevator being used by United Air Lines at eleven key points along its system. Built by Clark Equipment Co. of Bottle Creek, Mich., the lift is a hydraulic hoist which elevates a fork readily 12 feet. Powered by a 4-cylinder car engine, the machine will haul a train of three loading tugs at 35 mph.

the intermediate points at Worcester, Mass., and Waterbury, Conn., as the same flights as New Bedford-Full River, Mass.

Eastern is prevented from serving Boston on any flights except those which originate or terminate south of Richmond, Va., or west of Charleston, W. Va.

Two Applications Denied—Applications of Southeast Airways, Inc., and Colonial Airlines for routes between New York and Boston were denied.

Likewise denied were American's applications for additional intermediate points on existing routes between the termini in this case, and an application by United for the extension of AM 1 to Boston from New York.

In accordance with the Board's announced policy, the decision car-

ried the previous that service over the newly established routes shall not be started until after the war.

Returning Planes Carry Vital Cargo

During the first quarter of 1944, planes of the Air Transport Command and the Naval Air Transport Service, including airline contract operators, carried \$558 tons of strategic materials valued at \$31,800,000 sent from overseas points to the United States, the Office of War Information said last week.

This tonnage figure includes materials transmitted part of the way. Much of it was cargo carried "over the hump" between China and India.

Vital Materials—Priorities for

this cargo are established by the War Production Board through consultation with other agencies. Shipments of Foreign Economic Administration purchases totaled \$1,100,000 pounds.

Most of the cargo consisted of valuable minerals—ores, gemstones, industrial diamonds, berylites, tantalite—and medical materials.

Testimony Near End On Lakes-Florida

Consolidated hearing proceeds so rapidly that close is expected within two weeks instead of month as originally estimated.

The Great Lakes-Florida route case, one of the largest domestic consolidations before the Civil Aeronautics Board and the Beech's hope for improved air connections with the rest of the nation, proceeded so rapidly in its opening stages that it appeared that the case, arising originally and ten interferences may complete their testimony before the end of this, the second week.

Original estimates were that the hearings before Executive R. H. Newman would require more than a month. Beeches sought touch nearly 100 cities, 88 of which presented exhibits to show their need for air service. Early sessions piled up evidence to satisfy requirements of convenience and necessity, much of it being devoted to a showing that existing transportation services in the South by rail and bus often are inadequate.

American Leads OS—American Airlines led off the airline testimony, after a day of appearances by city witnesses. American seeks a Detroit-Miami route which would have the effect, if granted, of establishing a competitive alternative to Eastern's Chicago-Miami route, and link with American's present routes to complete for Boston-New York-Miami traffic with National and Eastern.

Charles A. Rhenstrom and C. W. Jacob, vice-president and secretary, respectively, of American, were cross-examined sharply by counsel for other applicants.

Argument in the early stages of the proceeding centered around the contention that American's proposal would have an adverse effect on other carriers. Colonial Airlines followed American, presenting evidence to prove convenience and necessity for the Chicago-Miami and Detroit-Miami

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Adequate lighting aids precision, reduces errors, corrects mistakes by cutting down eye fatigue. Better light intensity eliminates in part right for inspection tools.



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By lighting dark areas and danger points, eliminating reflected glare, reducing wear strain and fatigue, Dazor Floating Lamps help to check accidents of the worker.



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THE WORK REMAINS... but the Men Change! *



As we teach Army Aviation Cadets to fly, our duties are constant and our work is unceasing. Only our students are new, for we graduate one class of fine young men after another. The Army sends us these men. The Army supplies the planes. But the clocklike precision of Primary Training for those men is our duty . . . the accurate maintenance of those planes is our responsibility. Our flight instructors, mechanics and other specialists by the hundreds, are stationed in loyal duty. The work remains and the job is being faithfully done by the Civil Contract Schools!

Through this long war even our services technicians—both instructors and mechanics—have acquired valuable new experience. This will greatly benefit our services in commercial and private flyers after the war.



**SOUTHERN
AIR SERVICE, INC.**

Formerly GEORGIA AIR SERVICE, INC.

Flight Contractors to U. S. Army Air Forces — Bennettsville, S. C. and Jackson, Tenn.
Executive Offices — ATLANTA, GEORGIA

service applied for. Colonel's proposed route also would give Eastern competition between the Mid-West and Florida.

Delta proposes to extend its system to Chicago, Detroit, and Norfolk in the North, and into Miami and Jacksonville in Florida, via many intermediate stops. National seeks to link its present operations with Detroit and other mid-west cities via two alternate routes.

Pennsylvania-Central asks numerous extensions of its system, connecting Chicago, Indianapolis, Cincinnati, Rosemead, Louisville, Nashville, Savannah, Jacksonville, Miami and numerous other points with a network of routes.

Three non-operating applicants—Southern Airlines, State Airlines, and Virginia Central Airlines—also ask routes between the principal cities in the area.

Faced with these numerous applications, Eastern's case probably will be decisive in nature, though it, too, is seeking to expand. Routes it has requested include Columbus, S. C., Detroit, Rosemead-Pittsburgh, Chicago-Norfolk, and Louisville-Savannah.

10-Yr. Port Program Urged by Randolph

W. Va. Representative asks bill in Federal aid to reach new construction projects.

A bill pending for a nationwide airport construction program, introduced by Rep. Jennings Randolph of West Virginia, proposes Federal aid for states and other public bodies at the rate of \$100,000 a year for 10 years, agreements to be based on population, the number of registered aircraft and the area involved.

Under the bill, Federal funds would be matched by the states and construction work would be directed and supervised by state officials.

Expenditure—Randolph expects \$60,000 private planes within five years after the war and that a million persons will hold private pilot's licenses and that take-off and landing facilities must be provided. He added that a coordinated program, embracing airports of 10,000 airports of varied sizes and utility was vital. The bill also provides for disposal of surplus war airport properties which may become available for civil aviation use in the post-war era.

Air Cargo Study Will Forecast Big Future in Door-to-Door Service

Research conducted by domestic airlines to disclose potential business in shipments now carried by other transport means.

Seven domestic airlines should know by Jan. 1 the post-war potentials of domestic and international air cargo business. Participants in a nation-wide survey by Air Cargo Inc., now approaching completion, will receive a detailed report from Lester Ginsberg, market analyst in charge of the survey.

Some Data Confidential—Generalized statements covering Air Cargo's findings probably will be made public, but details of the report may be withheld for an indefinite period from others than the underwriting airlines because of the confidential nature of marketing data obtained, according to West Coast airline officials.

Meetings between Ginsberg and West Coast airline cargo chiefs during the past week developed some indications of trends of the survey. It will anticipate a heavy volume of door-to-door pickup and delivery business, and consider also the possibility of heavy shipments of farm products on an express-to-airport basis. To the list of commodities now generally considered for air haul will be added many not considered currently by airlines. Ginsberg included in his California test a trip to Salinas to survey the possibilities of lettuce shipment.

Sampling Method—The report will represent as its domestic phase a survey of class in three airline shippers as represented by the careful "sampling," nationwide, of five thousand firms whose shipping records, covering a period of years, have been studied

by Ginsberg and a staff of assistants. The international survey is expected to be completed by July 15 and will include the "sampling" of approximately 300 West Coast and East Coast firms now engaged in ocean shipping.

While confident that the Ginsberg report will offer a reliable estimate of cargoes and cargo volumes that will develop after the war, West Coast airline spokesmen admit they will be interested in comparing air freight's attractions with the many similar surveys now under development, such as the recently published Curtiss-Wright survey on air transportation in the immediate post-war period.

Board Issues Ruling On Mayflower Plan

Northeast Airlines to be permitted to buy New England company if price is reduced.

In addition to granting Northeast Airlines a Boston-New York route, Civil Aeronautics Board last week approved conditionally that carrier's proposed purchase of Mayflower Airlines, Inc.

The Board made its approval of the acquisition contingent upon a reduction of the purchase price to \$10,000 from the \$17,500 agreed upon by Northeast and the trustee in bankruptcy administering the affairs of Mayflower.

No Speculation—In imposing this condition, the Board stated that it has no intention of permitting transfer of certificates of convenience.



PCA WORKER DESIGNS NOSE HANGAR:

The nose hangar model shown here was designed by Lee J. Bregmeyer, buildings and facilities supervisor for Pennsylvania-Central Airlines. Repair docks are at each end, with offices and stock rooms in the middle. PCA has a nose hangar in operation at Rosemead, Va.

Rails Not Worried Over Air Freighters

Offices debate airlines can cut costs sufficiently to compete successfully with surface transportation companies.

While the airlines go ahead with their plans and predictions for a bright future in the air cargo field, executives of freight-carrying railroads are losing little sleep over competition from the air, which they see as a remote threat.

A recent survey by Railway Age, who interviewed a picked score of presidents and traffic executives of freight-carrying railroads in all sections of the country, led to the conclusion that "airplane competition for freight is not being over-looked, but it is felt that the rail factor will prevent such competition from becoming serious for some years to come."

► Sky Freighters Long Way Off—The executives were not alarmed, but several were quoted. This comment from the president of a southeastern railroad, was typical:

"While cargo aviation may be expected to be in general use after the war, many aviation experts agree that 'freight trains in the sky' are still some distance in the future. Air competition will be limited to long-haul, high-grade freight traffic, which might perhaps more appropriately be termed express traffic. Technical developments are rapid and may, of



RYAN OPERATIONS HEAD:

Expense R. Scroggins (above), former chief of the Santa Monica, Cal., branch of the Civil Aeronautics Administration's general inspection division, was selected recently as chief of operations of the feeder airline system proposed by the Ryan School of Aeronautics. Ryan's applications for air feeder routes in California are on file with the CAB.

Shippers' Guide

Sample of attention being given air cargo by the airlines, despite war diversion, is the guide for air shippers distributed by United Air Lines.

Supplementing the line's earlier and more cumbersome cargo guide, the new one contains a directory of regional privately controlled offices, plus addresses and information on cargo rates and loading weights, door dimensions, rates and what can and cannot be shipped by air.

United has been operating coast-to-coast all-cargo service since last October.

course, completely alter the picture, but cargo planes must be designed with a greater pay load and operate at less expense than anything now in prospect to present such competition for freight limited-

► Subsidies Discussed—Others and subsidies would be carried to an "almost length" before air competition would be appreciable, that they felt the "flying box car" would not be practicable for some time to come, that principal cargo plane traffic will be "high-rate express," and that cargo planes would not offer much competition "for at least a decade or two" after the war.

One traffic vice president at the southwest wrote that airlines "can't compete on a rate basis. I have followed their estimates as to the cost of handling freight very closely, and the lowest figure I have seen has been 1¢ per cubic foot-mile. As compared with the railway rate of about 1 cent per ton-mile, the conclusion is obvious. It is possible, of course, that technical improvements will lower air costs eventually, but I do not expect this for years to come."

► Seen Ammer In Speed—"Speed is what the railways will have to provide if they are to meet competition," observed the president of an eastern railway.

Another president, in the southwest, expects post-war competition from "sky ships," and believes "the media will probably be stacked against us because the railroads will continue to pay all of their costs out of their own pockets, while other competitors in the air, over the highway and on the water will continue to have the benefit of huge subsidies."

Airlines Facing Personnel Problem

Termination of domestic ATC contracts may bring changes in staff hierarchy.

With official announcement that the Army will cancel all Air Transport Command domestic contracts with the airlines by the end of the year, the personnel problem becomes a prime consideration for the carriers.

The War Department is attempting to trim the cancellations to fit the return of equipment, both to ease the personnel situation and simplify the shift from contract to commercial operation. Thus a recognition of the fact that each line will have its own personnel problem, depending on whatever it has had foreign or domestic contracts to combine with its commercial operations.

Overseas contracts are to continue, probably on a larger scale than heretofore.

► Added Personnel—This means that those lines, such as Northwest, which have had only foreign contracts or an emphasis on that type, probably will need additional personnel as retained planes permit wider commercial activity. Carriers like Chicago and Southern, whose ATC contracts have been confined to continental U. S., probably will not be able to assimilate the full maintenance and flight crews released by the cancellation, despite the return of planes. In some instances—Northwest is an example—there have been more aircraft in a line's contract than in its commercial operation. Lay-off probably will take place here also.

For the air transport industry as a whole, the total of new personnel required probably will be greater. Despite the fact that they may not be needed in their present positions after the domestic contracts are canceled, many workers doubtless will be able to find similar jobs with other airlines. The emphasis is expected on maintenance work and, while no major shortages are looked for, the lines may have trouble obtaining certain classes of mechanics.

► Availability Question—Flight personnel availability is also a question, but the contention is that it will be one of a problem, despite increased schedules, as the planes come back and the lines strive to balance their commercial

operations with what they were doing before the cancellation. Pilots released by stoppage of the contract operations can be shifted to regular commercial schedules. The War Department administrator said that before year-end ATC facilities and personnel will be doing all Army air transport service in continental United States. Increased personnel available to the Command in making the shift possible. Conversion from contract service to military operation has started, it was said, and "will be continued gradually" throughout the year.

Taxi Men See Clear Field For "Helicabs"

Hopes of taxicab applicants to post-war helicopter certificates from the Civil Aeronautics Board have not been dampened by the threat of competition in this field from bus lines and other contenders.

At the Cleveland meeting of the National Association of Taxicab Owners there was pronounced feeling that board policy does not favor blanket certification such as that requested by Greyhound Corp. The cabmen pin their faith in their own applicants as the experience in public transportation and the argument that helicopter service is a natural adjunct to the taxicab business, since they already serve the airports.

► Oppose Monopoly—They point out that often more time is required by air passengers to reach airports than to fly to their destinations and "helicabs" to neighborhood airports than would constitute essentially a loss service. One argument is that development of such a vast enterprise as the cab operators expect helicopter service to be should not be allowed to become a monopoly. Greyhound, they noted, is planning before the Board a number of separate applications, each covering an area, to replace its previous request for a blanket nationwide license.

► Applicants—Among applicants on file are those of many cab companies seeking the privilege of hauling passengers within a 16-mile radius of Cleveland, Detroit, Boston, Los Angeles, San Francisco, Philadelphia and other metropolitan areas.

Studies by the taxi owners assume rates, arbitrary pending experience, of \$3 for the first four miles and 30 cents a mile there-

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afew. This would make a 40-hour trip for one passenger cost \$9.20. Additional passengers would pay 50 cents each, mainly to cover insurance costs.

Correspondence with 40-odd manufacturers and engineers led to the expectation that a safe, dependable, four-place biplane will be developed for around \$7,999.

CAB ACTION

■ Federal Aviation Administrator John J. Cavanaugh has announced that the new jetliner must be able to fly at 10,000 feet in the event of engine trouble. The Administrator said that the new jetliner must be able to fly at 10,000 feet in the event of engine trouble. The Administrator said that the new jetliner must be able to fly at 10,000 feet in the event of engine trouble.

■ National Airlines said that it would make the flight from New York to Los Angeles in 10 hours. The airline said that it would make the flight from New York to Los Angeles in 10 hours.

■ Eastern Airlines said that it would make the flight from New York to Los Angeles in 10 hours. The airline said that it would make the flight from New York to Los Angeles in 10 hours.

■ United Airlines said that it would make the flight from New York to Los Angeles in 10 hours. The airline said that it would make the flight from New York to Los Angeles in 10 hours.

India Now and Post-war

To manufacturers of aircraft, ship engines, aeronautical equipment, accessories including aviation, radio, and electronic lighting and landing gear. The Asian Air Association is a group of manufacturers and engineers who are preparing to consider the exclusive agency for or sub-license to manufacturers—their manufacture in British India. The Asian Air Association is a group of manufacturers and engineers who are preparing to consider the exclusive agency for or sub-license to manufacturers—their manufacture in British India.

Back and other references submitted.
Communicate direct to:

THE ASIAN AIR ASSOCIATES
Warwick House, 55 Graham Road - Ballard Estate, Port, Bombay

CAR SCHEDULE

June 18, 1949, for the first time in the history of the airline industry, a new airline will be started. This airline will be started in the month of June, 1949.

NEW N.Y. State Line

Empire State Airlines, Inc. of New York, announced last week that it was beginning intermediate operations between La Guardia Field, Raitdridge, and Niagara Falls. These two-way service flights are being used on routes serving numerous intermediate points.

TWA Application Asks World Route

Preceding by a few days the Civil Aeronautics Board's announcement of a post-war international route pattern, Transcontinental and Western Air filed with the Board last week an application for an existing application, which, if granted, would establish an "around the world" route for TWA.

The application lists 10 key trade producing centers in the world—the British Isles, Central Europe, the Near East, the Middle East, Northern India, South China, Central China, North China, Manchuria and Korea, and Japan. TWA's proposed routes would link the largest cities in these areas with New York, Boston and Washington.

Jack Frey, the TWA president, said his company plans to fly the proposed routes with Constellation, bringing any point added in the application within 30 hours flying time of the U. S.

In another application, Lanes Aereas Mexicana, S. A. (Lanes) applied for entry into the United States, asking for information to extend its present Mexico operations from Coahuila, Mexico, through Nogales and Phoenix, Arizona, to Los Angeles, but not to serve domestic traffic within the U. S.

Plans to Buy Five Planes—Lanes has arranged to purchase five 10-passenger twin-engine Boeing B47D's for use on its routes between Chicago and Southern cities to include Birmingham and Port Arthur, Texas, as intermediate points on AM 53 between Shreveport, La., and Houston, Texas.

Continental Air Lines, seeking to integrate its present route pattern, asks a route between San Angelo and Port Worth-Dallas, Texas, either as a new route or extension of AM 28, and extension of AM 42 from Tulsa, Okla., to Port Worth-Dallas.

Goosey, Inc., applied for several amendments to AM 64, branching

Plane Returns

Airline routes last week were expected announcement that new additional planes would be returned to the lines from the Army before the end of the month.

Indications are that the number would be around 15, all DC-3s (Army C-47s and C-50s). Enough more to bring the additional planes to about 36 probably will be allocated by the end of summer.

Two recent allocations have brought the total of airline planes to 338, compared to the 306 top up by executive order. Some planes believe that late in the year will be added.

There are reports that some of the new returns will be allocated to lines now operating Lockheed Lodestars, some of which have been clearing for DC-3s. These lines are Continental, Mid-Continent, National and Island. A few Lockheed Lodestars have been offered in previous returns, but without luck. It is expected that National may be interested in acquiring a few.

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Action on Foreign Routes

THE HISTORY-MAKING PRESS CONFERENCE last week by the members of the Civil Aeronautics Board starts machinery for establishment of what will become the world's greatest airline system, under the American flag operated by several companies.

Unless Congress passes new legislation the idea of a single choice instrument is dead. Furthermore, there appears now little likelihood that Congress can be persuaded to pass such legislation.

The President's delegation to the CAB of this public announcement is simple proof that the White House and the State Department realize the importance and urgency of the Board and intend that it shall be given the responsibilities it deserves.

Sound Basis for Legislation

GRATIFYING consideration of industrial, state and federal officials toward a coordinated policy for civil flying, as a basis for proper basic legislation, is reflected in announcements by the Personal Aircraft Council of the Aeronautical Chamber of Commerce, the Civil Aviation Joint Legislative Committee and the National Association of State Aviation Officials.

The statement by the legislative committee, because of the group's varied membership, is receiving major attention. It suggests this policy:

Airports: Coordination of state, national and other government air agencies, with the U. S. establishing standards and classifications of all commercial or public airports. Such ports should be owned and operated by state political subdivisions, private enterprise, or either. State should have general supervision over design, location, construction and maintenance of all airports and landing areas licensed for commercial purposes or maintained by public funds. Federal assistance in financing of construction or improvements as a part of the state-federal airport plan should be by means of allocation of funds to and through state agencies. Airport licensing should be at the state level. Operation, control and management should be vested in state political subdivisions or private owner enterprise, or either. Protection of approach and landing areas in the air space adjacent to ports should be accomplished through exercise of state's right of present domain and under local police powers. These string regulations should be based on recommended uniform state zoning codes.

Safety Regulations: Aircraft and airman competency should be federal function, but federal safety regulations should be incorporated into state aviation codes to permit cooperation of state and municipal enforcement agencies with federal officials. State and its subdivisions should have

the right to make and enforce such safety regulations.

Funds: All funds from taxes on aviation fuels or aircraft should be devoted exclusively to aviation purposes.

Jurisdiction: State should have the power to control through existing state insurance commissions all matters of aviation insurance.

Judicial Review: There should be provision in all state air codes for uniform practice in public hearings and investigations and matters where public interest is involved, and for prompt judicial review of regulations enforced at the state level.

Definitions: Definitions and nomenclature in state aviation codes, federal legislation, and industry should be uniform.

Members of affiliation of the committee are the National Aviation Trades Association, Personal Aircraft Council of the Aeronautical Chamber of Commerce, National Aeronautic Association, National Association of State Aviation Officials, Aircraft Distributors and Manufacturers Association, Early Birds, and the Aviation Insurance Group.

The NASAO in a separate declaration called for coordination rather of state and federal functions, and Joseph Geuting, chairman of the Personal Aircraft Council, promised a painstaking review of rules and regulations, and simplification of federal procedure.

AOPA's Service

THE SHORTLY EFFICIENT Aircraft Owners and Pilots Association has celebrated its fifth anniversary with the largest membership in its history. Dedicated solely to the interests of the non-scheduled pilot, the association through its chairman, Lawrence Shargles, and M. A. Shryock, executive aide, maintains a faithful watch on events needing timely or oblique government agencies, cooperating and advising other aviation groups, and interpreting the relevant news of the month in its newsletter.

At the moment, AOPA is engaged in a campaign to find out why pilots who have been cleared by official government investigating agencies, and who have already received their airman identification cards, are still unable to obtain current aeronautical charts. The situation, described as "extremely dangerous and wholly unwarranted," probably will be cleared up shortly, because the proper Washington agency has been shown by the association that private pilots now have no means of knowing which restricted areas they should avoid and have no official notice of relocation of airway aids, surveys, and changes in airport facilities.

It is important, the AOPA says, that the voice of non-scheduled pilots be kept free and independent. It believes its membership of 10,500 pilots in five years has been achieved because of its single aim of serving that group.

ROBERT H. WOOD

TO AIRCRAFT MANUFACTURERS AND OPERATORS: HAVE YOU EVER ASKED THESE QUESTIONS?

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How does this compare with the conventional type shock mount?

Conventional shock mounts rarely absorb multi-directional vibration at all, except in the higher frequency ranges. They often amplify vibrations as much as 100 to 500% at several points within the normal operating range of the engine and aircraft. Mechanical and electrical failures of instruments and radio equipment are frequent and high overhaul and maintenance costs must be accepted.

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